Technology Subgroup Interim Report

Subgroup Activity:

Since the initial meeting of the Commission, members have met twice – June 2 and July 9 in Fredericksburg - to review documents that outline statewide technology-based economic development programs and strategies. They also heard more detailed presentations from VEDP, CIT, the Secretary of Technology's office on the history and status of broadband activities across the Commonwealth. The Subgroup identified several areas that will have the greatest impact on tech-based economic growth. Members are cognizant of the economic and budgetary challenges facing the Commonwealth, and are reviewing existing programs that need greater coordination, marketing and enhancement. The Subgroup is also reviewing successful tech-based economic development programs from other states that could be adopted for use in the Commonwealth.

Subgroup members also recognize the value of reaching out to stakeholders for comments, input and discussion and have identified the following organizations:

The Virginia Technology Alliance and the Ten Regional Technology Councils; Virginia Biotechnology Association ; Association of University Technology Transfer Managers (AUTM); National Business Incubation Association; Virginia Active Angel Investor Network; Mid-Atlantic Venture Association; and National Venture Capital Association.

The next meeting of the Subgroup is scheduled for August 11 in Richmond.

Analysis:

After hearing presentations and reviewing materials, Subgroup members determined that while the Commonwealth has programs in place to help other sectors, it lacks significant programs and policies directed specifically at early stage high growth, tech-based companies. These are the type of 21st Century companies that will drive innovation, future economic growth and sustainable jobs in the Commonwealth.

Presentations from VEDP/SRI and material from the Commonwealth Innovation Index being conducted by the Ten Regional Technology Councils and CIT identify unique and common industry clusters. For instance, energy and green technology industry clusters are being pursued in most regions, while an industry like bioscience has greater emphasis and opportunities in Richmond, Charlottesville and Northern Virginia because of the early investments in those areas.

Each region has a unique focuses such as the Lynchburg/Region 2000 area, which is focused on the nuclear and wireless industries.

While these studies are exploring many innovative opportunities within these clusters, they are also bringing to the surface many gaps that are impeding the Commonwealth from taking full advantage of the greater benefits of a technology-based Innovation Economy.

The two primary gaps that need to be addressed are the access to capital, including investments and tax credits, and commercialization of research and technology development. The aforementioned industry clusters, coupled with the economic downturn or transformations in some areas are attracting energetic entrepreneurs of early-stage, innovative, high-growth companies. These are companies at the early stage of the innovation spectrum between angel investments and more significant investments. Because of their unique nature, even in good economic conditions, these entrepreneurs have difficulty finding seed investments from the private and public sectors in Virginia. Today, the flat economy and frozen capital markets have only exacerbated the problem.

Vision Strategies:

Virginia must use new and existing technology and resources to position itself to create future technology-based economic development opportunities that spur sustainable job growth. We must promote the use of technology to help us solve many of the challenges we face as a Commonwealth, such as smart transportation solutions, a cleaner environment, more efficient health care delivery, increased educational opportunities for all citizens and a lasting effect on long-term economic stability.

Approach:

I. This Subgroup will examine existing programs and initiatives currently offered within the Commonwealth, while analyzing potential changes and enhancements, using best practices from industry and other sources inside and outside the Commonwealth.

II. This Subgroup will focus their evaluations and recommendations in those areas that foster innovation and technology-based economic development strategies.

Strategies:

I. Reaffirm financial support for sustainable or increased funding for CIT GAP Fund and tax credits for early stage companies.

II. R&D Strategy - look at ways to establish a statewide research and development strategic plan that clearly articulates the research direction, investment requirements, expected quantitative and/or qualitative returns and obstacles to resolve.

III. Assess which sectors of biotechnology and information technology Virginia is currently positioned to develop and consider strategies to maximize opportunity within those sectors.

IV. Accelerate Broadband Deployment: Update the Commonwealth Broadband mapping and development plan to address the gaps in coverage in all localities.

V. One major area that can and will lead to job creation is the implementation of electronic medical records. This is a major initiative that should be considered to see how Virginia can position itself to take full advantage of updating these records.

VI. Consider how we can attract advanced technology early stage investors to Virginia.

VII. Examine how Virginia can implement a refundable R&D tax credit targeted at advanced technology companies, especially those that sponsor research with Virginia universities.

VIII. Increase the number of investors who apply for the Angel Investor Tax Credit through effective marketing of the program.

IX. Consider how increase biotechnology infrastructure including additional Bioscience "wet-lab" development.

X. Examine the Technology Business Commercialization Programs (Business Incubator Program).

XI. Streamline and simplify the technology transfer process at Virginia institutions.

XII. Provide outline for all-up Chief Executive marketing/public relations campaign to promote Virginia's assets around job creation and viability for formation of new, organic businesses.

XIII. Modeling and Simulation: Examine ways to grow the modeling and simulation center at Old Dominion University, review opportunities and complementary research that will expand additional centers throughout the Commonwealth.

Initial Ideas and Recommendations:

Capital Formation

The Commonwealth has some small programs with limited funding available to assist entrepreneurs, but the Subgroup agrees that more is needed. Specifically, members are reviewing:

- A refundable R&D tax credit targeted at advanced technology companies, especially those that sponsor research with Virginia universities. A similar tax credit is used in 38 other states.
- An advanced technology jobs convertible loan fund for high-growth, advanced technology companies based in the Commonwealth.
- Increase the Angel Investor's Tax Credit and also explore the possibility of auditing and improving existing marketing programs to increase the number of applications for the Angel Investor Tax Credit.

- Increased funding for the CIT GAP Funds, which has invested $3.8 million since 2004 and has helped 39 companies, that have attracted another $51 million in private investments – a 13 to 1 return on investment.

- A "VentureVirginia" program to increase venture capital investment that generates funds with tax credits to insurance companies that expedite payment of their state taxes due in 2015. The concept is being advanced in Maryland, Tennessee, and Texas, and is similar to the Small Business Investment Company Credit offered by Delegate Merricks and part of the Governor's Agenda in the 2010 Session.

- Programs to attract advanced technology early stage investors to Virginia by investing in a special life sciences, clean energy, medical devices, or other technology services venture capital fund or "fund of funds" that would be matched by private venture capital.

- A relocation fund to attract innovative, high growth technology companies from other states to Virginia.

R&D Strategy, Commercialization and Tech Transfer

In addition to addressing the capital formation "gap," the Subgroup is also focusing on the need to improve the Commonwealth's Research and Development strategies and investments, as well as the commercialization of university research. In 2008 Virginia ranked 16th nationally in R&D expenditures. To inject more R&D in the Commonwealth, Virginia must execute on its recent decision to develop a long-term strategic R&D plan that is integrated with a capital investment plan that is not limited to new facilities, as has been done in the past. As the Commonwealth's Chief Research Officer, the Secretary of Technology must establish a comprehensive strategy that includes:

- The work being conducted by the Innovation and Entrepreneurship Investment Authority to establish a statewide research and development strategic plan.

- Streamlining university developed intellectual property licensing and commercialization to reduce inherent barriers to university/industry collaboration.

- Establishing an immediate emphasis on energy research, commercialization and new company formation.

- Coordinating existing transportation-sector initiatives and encourage development of alternative product and service offerings through research, commercialization and new company formation.

- Reprogramming and investing in the Commonwealth Research and Commercialization Fund (CRCF) to serve as an incentive for new and improved commercialization programs.

As this new approach to R&D planning generates innovation and marketable solutions, the Commonwealth will need to improve technology commercialization to enhance the transition of

these discoveries from the research lab to the market place. Specifically, the Subgroup is reviewing:

- The need to streamline and simplify the technology transfer process at Virginia institutions by creating incentives that reward policies and programs that simplify contractual and financial negotiations while providing reasonable wages for researchers and value based pricing for industry.

- A Virginia version of "San Diego CONNECT" to link entrepreneurs, capital, talent and technologies available for commercialization in the Commonwealth.

- A strong focus on research and investments in alternative energies and green technologies, and the expansion of modeling and simulation activities across the Commonwealth.

Wetlabs and Incubators

The expansion of wetlabs and incubators has long been supported by previous state commissions and policy groups to enhance Virginia's competitiveness in life sciences. Expanding wetlabs would allow Virginia to attract companies by having product "in place" rather than just showing prospects raw land which will add 12-15 months to the occupancy timeline. It also allows Virginia to compete with other states implementing various types of loan and lease guarantee or grant programs for biotechnology facilities.

The Subgroup is also reviewing the idea of a comprehensive program to create a network of "knowledge-based" industry incubators and commercialization centers around the Commonwealth – both university-affiliated and independent. Knowledge-based businesses are often founded by scientists, engineers and other technology-oriented individuals who may have had little or no experience in starting a business or in dealing with business challenges. This is frequently in contrast with companies started out of general business incubators which often are founded by individuals with previous startup or business experience.

While the recommendations and principles advocated apply to both university and independent incubator programs, Subgroup members strongly recommend targeting any new funds to those incubators with sound business plans and acknowledged best practices that demonstrate a strong return on investment.

Broadband

Broadband access is crucial to the Innovation Economy. The Virginia Tobacco Commission has invested more than $100 million for broadband infrastructure build out in both Southwest and Southern Virginia. Currently, CIT is investing $1.8 million in broadband data collection and mapping activities and $500,000 for broadband planning activities over a two-year period in Virginia. The Subgroup will continue to work with Karen Jackson, Deputy Secretary of Technology, to determine additional recommended actions.

Health IT

Virginia possesses many assets needed to be a national leader in health IT and has gotten off to a strong start on creating electronic health records. Due to the proximity and actions underway at the federal government, along with the innovation by many of Virginia's IT companies, Virginia is ahead of many other states as it relates to health IT. Working through existing HHR initiatives, Virginia should inventory and assemble these pieces into a cohesive statewide strategy that can be used to claim leadership in the health IT sector.

The Subgroup fully supports recommendations by the Transition Team to invest more in health IT. According to transition documents, a first step is to begin to digitize all medical records. As a start, the Governor should require that all state employees' health records be digitized. This would send a signal to the private sector that Virginia is ready to engage in public-private partnerships to expand the use of health IT, lowering the cost of healthcare delivery while creating economic development opportunities and jobs.

Already, an initiative is underway to expand the use of electronic health records (EHR). Earlier this year, the Virginia Healthcare Quality Center and CIT won a $12 million co-operative agreement from the U.S. Department of Health and Human Services and its Office of the National Coordinator for health IT to implement the expansion of electronic health records (EHR) for nearly 2,300 priority primary care providers in Virginia by February 6, 2012. These providers are defined as urban and rural practices with less than 10 healthcare providers. Currently in Virginia these practices have less than a 10% adoption of EHR. This program will help improve healthcare and reduce costs in Virginia, while creating health IT jobs across the State.

On June 15, Virginia HIT, the federally designated Regional Extension Center for Virginia, in partnership with the CIT, announced its preferred partners to work with primary care physicians across the Commonwealth (including pediatricians and obstetricians/gynecologists). These three partners — Allscripts, athenahealth, and MDLand — will provide a Software as a Service (SaaS) solution to approximately 2,300 physicians to meet EHR certification requirements for Meaningful Use. Additional services will include education, technical and implementation resources.

The Subgroup believes that the Commonwealth should pursue other components inherent in a strategic health IT program. Given the cluster of many large and small businesses and non-profit organizations that are engaged in health IT, and their proximity to and strong contractual relationships with federal agencies, Virginia is well positioned to be a leader in this field. To further explore this area, members will consult with the Secretary of Health & Human Resources, VEDP and others on additional health IT and telemedicine initiatives and opportunities, such as personalized medicine, point-of-care diagnostics, computational technologies, data interchange and other innovations that are revolutionizing the healthcare industry.

Modeling and Simulation

The Subgroup recommends the continued development of modeling and simulation technologies in the Commonwealth. Since the founding of the Virginia Modeling, Analysis, and Simulation

Center in 1997, the industry has seen significant growth take place, becoming a $640 million industry employing over 5,000 people with an average salary of $83,000 each year. The Subgroup advocates a number of action items, such as examining opportunities for pilot and/or demonstration projects using modeling and simulation with Virginia state government agencies as well as working to attract a federal Modeling and Simulation Lab in Virginia. These complement local initiatives already underway in Hampton Roads and Northern Virginia.

Marketing

Although the Subgroup is advocating these additional measures, members agree that much more needs to be done to market existing tools to entrepreneurs and investors. Members will recommend suggestions on ways that the Commonwealth can celebrate entrepreneurs and innovation, and also initiate an audit of existing materials and tools to enhance their effectiveness.

Next Steps:

In addition to narrowing, focusing and building on existing ideas and recommendations, the Subgroup agreed that more information is needed in the areas of health IT and broadband access.

The Subgroup also began discussing the use of local technology zones that use tax breaks and other incentives to attract innovative high growth technology companies. Members and staff will conduct additional research into the use of the technology zones and how they can be linked to other federal and state programs, and consult with staff from the Secretaries of Health and Technology to determine what needs it can best address in the areas of health IT and broadband. These issues will be the primary points of discussion at the Subgroup's next meeting in August.